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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,968	07/31/2003	John J. Rossi	1954-401	3645

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EXAMINER	
SHIN, DANA H	
ART UNIT	PAPER NUMBER
1635	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	01/09/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 01/09/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTO-PAT-Email@rfem.com

Office Action Summary	Application No.	Applicant(s)	
	10/630,968	ROSSI ET AL.	
	Examiner	Art Unit	
	Dana Shin	1635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 November 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Application/Amendment/Claims

This Office action is in response to the communications filed on November 24, 2006.

Currently, claims 1-23 are pending. Applicants have cancelled claims 24-29.

The following rejections are either newly applied or are reiterated and are the only rejections and/or objections presently applied to the instant application.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Response to Arguments and Amendments

Withdrawn Rejections

Any rejections not repeated in this Office action are hereby withdrawn.

Maintained Rejections

Claim Rejections - 35 USC § 112

Claim 18 remains rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 18 recites the limitation "the cells". There is insufficient antecedent basis for this limitation in the claim because claim 18 refers to the method of claim 17, which does not contain

the phrase "cells", but "a cell" instead. Accordingly, the amendment entered in claim 18 did not perfect the deficiency pointed out in the previous Office action.

Claim Rejections - 35 USC § 103

Claims 1-5 and 8-21 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Paddison et al. (*Genes & Development*, 16:948-958, 2002), in view of Tuschl (*Nature Biotechnology,* 20:446-448, 2002), Yu et al. (*PNAS,* Applicants' IDS citation AH, filed on November 19, 2003), Livache et al. (U.S. 5795715, 1998, also Applicant's IDS citation filed on August 15, 2005), and Jones et al. (*Nature,* 344:793-794, 1990) for the reasons of record as set forth in the Office action mailed on May 24, 2006 and for the reasons stated below.

Applicant's arguments filed on November 24, 2006 have been fully considered but they are not persuasive. Contrary to applicant's assertion that none of the references by Paddison et al., Tuschl, and Yu et al. are prior art to the present invention because they do not predate the claimed priority date of either 8-1-2002 or 9-2-2002, all the applied references are legitimately qualified as the proper prior art because the publication dates for all the applied prior art references predate the earliest possible filing date of August 1, 2002, as indicated below:

1) Paddison et al.- April of 2002

2) Tuschl - May of 2002

3) Yu et al. - April of 2002

Since all the applied prior art references predate the earliest possible filing date of August 1, 2002, the prior art rejection under §103(a) is deemed proper.

Claims 6-7 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Tuschl and Livache et al., as applied to claims 1-5 and 8-18 above, and further in view of Jeng et al. (*JBC*, 267:19306-19312, 1990).

Applicant's arguments filed on November 24, 2006 have been fully considered but they are not persuasive. Contrary to applicant's assertion that the Tuschl reference is not prior art to the present invention, it is published in May, 2002, which precedes the earliest filing date of August 1, 2002. Accordingly, the prior art rejection under prior art rejection under §103(a) is deemed proper.

New Rejections Necessitated by Changed Priority Date

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paul et al. (*Nature Biotechnology,* May 2002, 20:505-508, applicant's citation No. AG, IDS filed on November 19, 2003) in view of Livache et al. (U.S. 5,795,715, also Applicant's IDS citation filed on August 15, 2005).

The claims are drawn to an amplification-based method for producing a promoter-containing siRNA expression cassette, further comprising the step of transfecting a cell *in vitro* with the amplified promoter-containing siRNA expression cassette, wherein the cell is transfected with two or more different siRNA expression cassettes containing different siRNAs.

Paul et al. teach that siRNA expression cassettes containing U6-promoters successfully inhibit expression of a target gene. They teach the use of several siRNA cassettes which are targeted to multiple mRNAs. They teach that targeting both an endogenous human splicing factor and HIV-1 reverse transcriptase coding region by hairpin siRNA strategy has been shown to be effective. Further, they teach testing multiple target sites of a desired target gene in order to find the one siRNA that gives the strongest inhibition (page 507). Paul et al. do not teach a method of producing siRNA expression cassettes containing U6-promoters via PCR-based system. The reference of Paul et al. was published in May 2002, which predates the effective filing date of September 6, 2002 for claims 22-23.

Livache et al. teach a method of producing a double-stranded RNA expression cassette containing a promoter via a PCR-based method by integrating oligonucleotide primers that are complementary sequences that encompass the sequence of a promoter and the target sequence, wherein the duplex RNA has a defined length (columns 3 and 6).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of the prior art in order to produce U6-promoter containing siRNA expression cassettes via PCR-based amplification system wherein two siRNA expression cassettes containing two different siRNA target sequences are transfected into cells *in vitro*. The skilled artisan would have been motivated to do so with a reasonable expectation of success because Paul et al. expressly teach that U6-promoter containing siRNA expression cassettes are effective in gene silencing and that targeting two different genes simultaneously via transfecting two different siRNA expression cassettes have been reported to be successful (page 507) and because Livache et al. teach a method of producing a promoter-containing dsRNA expression cassettes via PCR-based amplification method. One of ordinary skill in the art would appreciate the time-saving advantage of the PCR method of Livache et al. over endonuclease-mediated gene cloning/ligating/transforming technique of Paul et al. (page 508), thus, the skilled artisan would have been motivated to replace the method of making the U6-siRNA cassettes of Paul et al. with the PCR-based method of Livache et al. Further, the skilled artisan would have been motivated to transfect two differently targeted siRNA expression cassettes into cells *in vitro* as taught by Paul et al. in order to measure synergistic or antagonistic effects of knocking down two genes simultaneously.

In light of the above, the instantly claimed invention taken as a whole would have been *prima facie* obvious at the time of filing.

Conclusion

No claim is allowed.

Note that all the applied references herein are published before the earliest priority date possible.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dana Shin whose telephone number is 571-272-8008. The examiner can normally be reached on Monday through Friday, from 8am-4:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Douglas Schultz can be reached on 571-272-0763. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dana Shin
Examiner
Art Unit 1635

TC 1600
JANE ZARA, PH.D.
PRIMARY EXAMINER